PATENT COOPERATION TREATY

RECEIVED
OCT 31 2005
BARNES & THORNBURG

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
JEFFREY A. MICHAEL
BARNES & THORNBURG LLP
11 SOUTH MERIDIAN STREET
INDIANAPOLIS, IN 46204

DOCKETED
FOR Response due / comments
BY Ed
DATE 11/1/05
CHE'D BY
DATE

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43*bis*.1)

Date of mailing (day/month/year)	27 OCT 2005
Applicant's or agent's file reference 29920-76277	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date (day/month/year)	Priority date (day/month/year)
PCT/US04/41171	15 November 2004 (15.11.2004)	14 November 2003 (14.11.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): H01J 49/42 and US Cl.: 250/292,282,288

Applicant

INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY

1. This opinion contains indications relating to the following items:

- [X] Box No. I — Basis of the opinion
- [ ] Box No. II — Priority
- [ ] Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV — Lack of unity of invention
- [X] Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI — Certain documents cited
- [ ] Box No. VII — Certain defects in the international application
- [ ] Box No. VIII — Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(*b*) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	26 September 2005 (26.09.2005)	John R Lee Telephone No. NA

Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/41171

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ on paper

☐ in electronic form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in electronic form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/41171

Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-34	YES
	Claims NONE	NO
Inventive step (IS)	Claims NONE	YES
	Claims 1-34	NO
Industrial applicability (IA)	Claims 1-34	YES
	Claims NONE	NO

2. Citations and explanations:

Claims 1-34 lack an inventive step under PCT Article 33(3) as being obvious over US 4,920,264 (Becker et al). In reference to claims 1, 5, 10, 11, and 21, Becker teaches a method for fragmenting an ion, where the ion is a peptide ion, the method comprising the steps of exciting one or more carbon bonds present in the ion by exposing the ion to a source of vacuum ultraviolet radiation at a wavelength, and at an energy sufficient to fragment the peptide ion by breaking at least one of the bonds (Column 4 lines 49-57, column 5 lines 13-22, column 7 lines 55-68). Becker fails to show the specific wavelength being claimed by applicant, but it would not require an inventive step to have such wavelength since such wavelengths are notoriously old in the art. In reference to claims 2-4, 12-15, and 22-23, as discussed above Becker fails to show the specific wavelengths being claimed by applicant, but it would not require an inventive step to have such wavelength since such wavelengths are notoriously old in the art. In reference to claims 6-8 and 16-18, Becker fails to show the specific ion range being claimed by applicant, but it would not require an inventive step to have such ranges since such ranges are notoriously old in the art. In reference to claims 9 and 19, Becker teaches measuring the mass/charge ratio of the fragments (abstracts). In reference to claims 20 and 24, Becker teaches a method wherein the exposing step is performed in an apparatuses comprising a mass spectrometer (column 8 lines 20-27). In reference to claims 25 and 26, Becker teaches a method wherein the mass spectrometer includes a first component comprising a source of radiation capable of forming the peptide from the sample (column 8 lines 13-43). Claims 27-34 are various mass spectrometer components, none of which would require inventive step. All of the cited limitations are notorious old and well known in the art, and would be obvious to incorporate to one of ordinary skill for the purpose to mass analyzation.

Claims 1-34 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.